note of it, if
it is not
already in the
did in what
you observed
to Phys. Soc.

I am
yours truly
Hayleigh

Apr 7/97

10, Downing Street,
Whitehall. S.W.

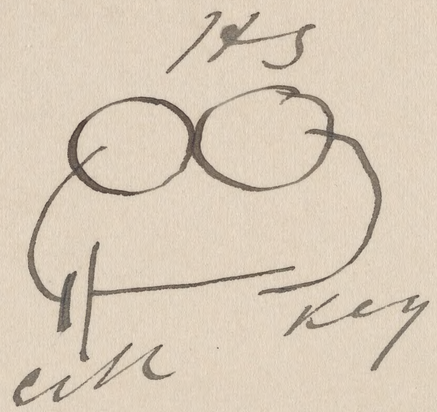
Dear Sir

I was sorry
not to be able
to come to the
meeting of the
Phys. Soc. the
other day, the
more as I had
myself exper
imented upon
somewhat the
same lines as
yourself. I did
not succeed
so well as
you appear to
have done in

DSI

causing the
separation of
an emulsion;
but there
was one exp
eriment that
went pretty
easily that
seems to me
rather different to
what you describe.

Two pools
of oiled
Hg in a
watch glass
are joined up




through a Le-
clanché cell
& a key. When
the key is put
down, the pools
unite. And
without putting
down the key
union occurs
if a spark is
taken in the
neighbourhood.
I am sharing
this next
Saturday at
R.I. in illus-
tration of the
coherer, &
wd perhaps
publish a short

Lord Rayleigh
on my Hs expenses

9/0

R. Appleyard Esq
139 Church
Lane
Chatham
Kent

Rayleigh

6.10 PM
AP 6
91

130

The Right Hon. Lord Rayleigh. 7. IV. 97.

Mylord,

It is very cheering to have your Lordship's kind expression of interest in my work. The experiment (your letter) ~~with the~~ two pools of oiled Hg in a watch glass, is a very simple & beautiful case of what I have ventured to call "mobile" coherence. The apparatus I used ~~for this~~ to illustrate this was a tilted photographic dish, with Hg globules in a mixture of (paraffin) oil & water, at the (inside) lower edge. If clean paraffin oil per se is ~~used~~ employed, ~~observed by direct current the initial resistance is very high, & coherence & all the rest if the oil is separating globules is a~~ ~~mere thin skin~~ coherence by direct current from a small battery is only possible across mere skin thicknesses of oil. If I have failed to unite globules across an oil space of $\frac{1}{32}$ inch. by ~~a steady voltage of~~ applying 1170 steady volts. On the other

hand, if only water is used, the Hg cannot be handled; it coheres spontaneously. ~~He it is~~ It is best to use water with just enough paraffin-oil added to check spontaneous coherence. ~~The battery should be~~ ~~This is one of the elements~~ ~~of success~~ If such a mixture of oil & water is poured into a level photo dish, & mercury is added ~~enough~~ to cover the bottom, the mercury can be cut up into mosaics. By a small Hertz oscillator ~~it~~ often possible to ~~cause~~ bring about coherence ~~along definite lines along definite~~ in a definite direction in a more or less right line through the mosaics, indicating the direction of the electro-static waves. But this is rather too capricious an expensive for a lecture. My ~~small~~ small portable battery of 200 cells, & the "coherer" tubes, are entirely at your ~~disposal~~ service ~~if need be~~, on Saturday, & at all times. If I had a telegram tomorrow, they could be got to town by Friday morning.

I am, my Lord
Yours very truly
R. Blondlot

ISO Repy to Lord Rayleigh

Ap 27/91

4, Carlton Gardens,
S.W.

Dear Major Cardew
The difficulty
of the situation
is that we
not really
know all about
the blank cell.
Nyoman feeling
wd be to limit
their part wh
lawyers are to
be at liberty

DSI

to pull about
to the definite

In the new
draft I have
all reference
to heating has
disappeared.
But ii (2) what
is the use of
adding mercury
beforehand
without heat?
The parts will
be during use
in contact
with mercury.

Yours truly
Rayleigh

Lord Rayleigh.

Feb 6/02

10, Downing Street,
Whitehall. S.W.

Dear Prof Thompson

It is very good of you to offer to send me your ring. I shall be very glad to have it, as it will save me the trouble of getting one made. Will you throw in the egg?

Yours

DSI

worst of getting things for R.J. is that when one wants them again after 2 or 3 years they are damaged or lost.

I shall probably not actually shew the things for 2 or 3 weeks or more, but if you can not using them at present I may as well have them in good time. I would return them before Easter.

Yours truly

Ray Lankester

Prof. S. P. Thompson
FRS

Nurland
Christett R.
West Hampstead
N.W.

Dr. Rayleigh

10, Downing Street,

Whitehall.

SGD

(2)

1. Perhaps to begin.

2. Pasteurs' discoveries respecting fermentation & disease, leading to distinct work [illegible]

Rayleigh

L 12

# POST CARD

THE ADDRESS TO BE WRITTEN ON THIS SIDE

Mr A. B. Cooper,

34b, Earlsfield Road,

Wandsworth Common,

S.W. 18.

DSI

Lord Rayleigh N.P. Laboratory

Terling Hall

Witham

Essex

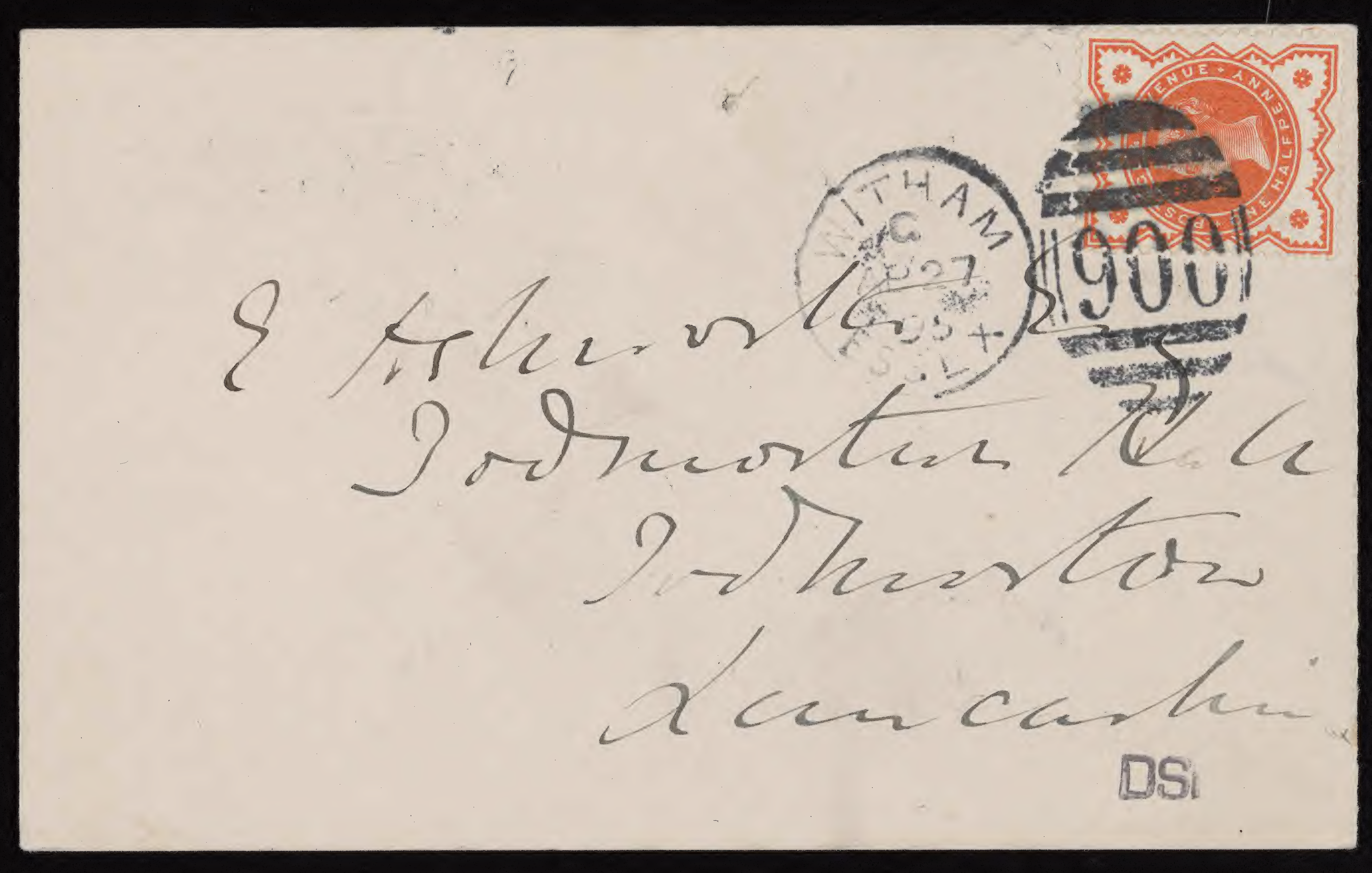
I should like
very much to
take part in
such a meeting
as
that. But
I
cannot
undertake
to
write
on

agree, but I
don't think that
it is advisable
at present
for Lundeen
to take a
prominent
part in the
matter in
Pittsburgh
Replogle

DSI

10, Downing Street,
Whitehall. S.W.

Yours truly
Rosebery


WITHAM
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TERLING PLACE,

WITHAM, ESSEX.

Ibelius Young's General Astronomy is considered one of the best Tex books.

Rayleigh

Lord Rayleigh 1842-1919

Lord Rayleigh. (Science)

TELEGRAPH STATION
HATFIELD PEVERIL.

TERLING PLACE,
WITHAM, ESSEX.

Aug 26/86

Dear MacCarthy

I hope to be
with you
next time in
Sept 1. Evelyn
is making her
own thoughts
Ruth I Dodge

there maybe
nothing to
present my
coming.
Please do as
you suggest
about places.
But they
may make
me go on plat

form.
Yrs. very truly
Rayleigh

HÔTEL DE RUSSIE
HOMBOURG-LES-BAINS.

June 30

Lord Rayleigh presents his compliments to Dr. Deetz, I will be glad to learn how soon Dr. Deetz can pay him a visit, as Lord Rayleigh wishes Dr. Deetz's opinion before making arrange-

ments about
lodgings.

DSI

I shall be much interested to hear Prof. Ettingshausen's results.

London

4, Carlton Gardens,
S.W.

July 3/84

Dear Sir

My investigations on the electrochemical equivalent of Silver & E.M.F. of Clark cells have been communicated to the Royal Society, but are not yet published in full.

DSI

au 18575

Abstracts however have appeared, of which I am sorry to say I have not separate copies by me. They may be found in Nature for March 13 & April 10, 1884.

The final number for silver is .011180 C.G.S. The E.M.F. of Clark cell at 15° = 1.454 B.A. volt = 1.435 true volt. But the cells differ among themselves more than 1/1000.

I am
yours truly
Rayleigh

over

Terling Place
Witham
Essex

Dear Sir
I am much
interested to
hear that pro
results for Clark
cells agree so
closely with my
own. I under
stand that pro
cuments were

DSI

No 18575

measured by the
blues Williamette
– a method that
I have also a-
vailed myself
of in recent
experiments.
Enclosed is a
separate copy
of my Preliminary Notice.
The complete
paper is now
in the hands of
the Royal Society.
Again thanking
you,
I remain
yours very truly
Rayleigh

# AUTOGRAPHE

de

*Rayleigh*

*John William Strutt, Baron*

## OBSERVATIONS

1/ L.a.s. 3 1/2 p. 8°, London, 3.7.1884, an A. v. Ettinghausen, Graz, über seine Arbeiten betr. das elektrochemische Aequivalent des Silbers in der Clark-Zelle und frägt E. um seine Ergebnisse.

2/ L.a.s. 2 1/2 p. 8°, Terling Place / Essex / an A. v. Ettinghausen, Graz, freut sich, dass E.'s Resultate mit seinen eigenen übereinstimmen, sendet Separatabdruck seiner Vornotiz - die ganze Arbeit befindet sich derz. in Händen der Royal Society.

R a yl e i g h, John William Strutt, Baron.-
Ward 1869 "Fellow"of the Trinity College" in Cambridge; hiess ver 1873 Hon.J.W.Strutt, von da an Lord Rayleigh; seit 1879 als Nachfolger von Maxwell Prof.d. Exper.Physik an der Univers. Cambridge; lebte vorher auf seinem Landgute zu Terling bei Witham in Essex; dann Director des"Davy Faraday Research Laboratory" der Roy Institution, 1873 Mitgl.d.London Roy.Soc. /Or.81/, 1885-96 Secretair der London Roy.Soc., meist in Terling Place wohnen, wo auch die meisten seiner Arbeiten ausgeführt wurden /Orig.1903/,/Nachr. im Amer.Journ, Silliman, 48, 1919, Chicago, Astroph.J., 50, 19, Lond., R.Soc.Proc.,98, 21, Phil.Mag.38, 19/,
geb.1842, Nov.12, Langford Grove, Essex,
gest1919, Juni 30.Terling Place,Witham,Essex.
Theory of sound, 2 vol.,638 p. 8°, London, 1877-78 /deutsch v. F.Neesen/.

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## OBSERVATIONS

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Astron. Soc. Mouth. Not.: Diffract. of object glasses, 4 p. /33, 1873/.

Brit. Assoc. Rep.: Induction balance, 2 p. /1880/.- Tension of Hg vapours, 1 p.- Absol. measur. & durat. of electr. curr., 2 & 2 p./1882/.- Suggest. for t. use of a delicate ballance, 2 p.- Imperfect. of t. galvanom. as a test for t. evanesc. of a current, 2 p./1883/.

Cambridge, Phil. Soc. Proc.: The min. aberrat. of a single lens for parallel rays, 2 p./3, 1880/.- New arrangem. for sensit. flames; effect. of vibr. on a susp. disc., 2 p.- Use of telescopes on dark nights, 2 p.- New form of gas battery, 1 p.- Mean radius of coils of insulated wire, 4 p.- Invisibil. of small objects in a bad light, 1 p./4, 1883/.

London, Math. Soc. Proc.: Explanat. of coronas, 2 p./3, 1871/.- Vibration of a gas contained within a rigid spheric. envelope, 11 p.- Disturbance produced by a spheric. obstacle on the waves of sound, 30 p.- General theorems on vibrat., 11 p./4, 1873/.- Numer.

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calculat.of the roots of fluctuat. funct., 6 p.- Vibrat.of membranes, 1 p./5,1874/.Probl. relat.to t. potential, 5 p. /7, 1876/.- Progress.waves, 6 p.- Relat.betw.t.funct.of Laplace & Bessel, 4 p. /9, 1878/.- Instability of jets, 9 p./10, 1879/.- Reflect.of vibrat.at the confines of 2 media betw. which t.transit.is gradual, 5 p.- Stability or instabil. of fluid motions, 14 p./11,1880/.- Infinites.bending of surf.of revol., 13 p. /13,1882/.- Equlibr.of an incompress.fluid, 8 p./14,1883/.

London, Phil.Trans.: Values of $\int_{-1}^{1} Q_n Q_{n'} du$, $Q_n$ & $Q_{n'}$ being Laplace's coeffic. of the orders, n, n', theory of radiat., 11 p. /160, 1870/.- Theory of resonance, 41 p./161, 1871/.

London, Roy.Soc.Proc.: Reproduct.[1,2,3] of diffract.-Gratings by means of photogr., 2 p./20, 1872/.- Applic. of t.principle of reciprocity to acoustics, 4 p. /25, 1876/.- Amplitude of soundwaves, 2 p./26,1877/.- Influence of electric.on colliding

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water drops, 4 p./28,1879/.- Capill.phenom.of jets, 27 p./29 & 34, 1879 & 83/.- Determ.of t. ohm in absol.measure /mit A.Schuster/, 40 p. /32, 1881/.- Spec. resist.of Hg /mit Mrs.El.Sidgwick/, 1 p.- Dark plane formed over a heated wire in dusty air, 5 p./34, 1882/.

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refract., 5 p./11,1881/.- Electro-magn.theory of light, 20 p./12,id./. Equilibr.of liquid masses, charged with electric., 2 p.- Instrumcapable of meas.the intens. of arial vibrat., 1 p.- Methods for t.determ.of resist., 17 p./14, 1882/.- Vibrat.of a cylindr. vessel contain.liquid, 4 p. Maintained vibrat., 7 p./15, 1883/.- Crispations of fluids resting up. a vibrat. support, 9 p.- Porous bodies & sound, 6 p.- Laplace's theory of capillar.,6 p. /16,id./.

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London, Math.Soc.Proc.: Form of standing waves on t. surf. of running water, 10 p./15, 1884/.- Waves propagated along t. plane surf. of an elastic solid, 9 p./17, 1886/.- Stability or instab. of cert. fluid motions, 16 p./19, & 27/. Point-, line-, & plane-sources of sound, 4 p./19, 1888/.- Free vibrat. of an infinite plate of homogen. isotropic elastic matter., 10 p.- Uniform deformat. in 2 dimens. of a cyclindr. shell of finite thickness, 10 p./20, 1889/.- Propagation of waves, upon t. plane surf. separating two portions of fluid of different verticities, 6 p./27, 1896/.

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5 p./45, 1889&-- Tension of recently formed liquid surf., 6 p.- Measurem. of the amount of oil necessary in order to chek t. motions of camphor upon water, 3 p. /47, 1890/.- Superficial viscosity of water, 13 p./48, 1890/.- Sensitiveness of t. bridge method in its applicat. to periodic electric currents, 14 p./49, 1891/.- Relat. densities of H & O, 15 p. /50, 1892/.- Densities of t. principal gases, 16 p./53, 1893/.- Anomaly encountered in determinat of t. density of N gas, 4 p./55, 1894/.- Argon. I a new constituent of t. atmosphere, 22 p./57, 1895/.- Physical prop. of argon & helium, 10 p./59, 1896/.- Amount of argon & helium contained in t. gas from t. bath springs, 1 p./60, 1897/.- Viscosity of H as affected by moisture, 5 p.- Densities of CO, $CO_2$ & nitrous oxide, 5 p./62, 1898/.- Character of t. impurity found in N-gas derived fr. urea, 5 p./64, id./. Viscosity of argon as affected by tempor., 7 p.- Weight of H desiccated by liquid air, 1 p./66, 1900/. Viscosity of gases as affected by

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temper., 2 p./67, id./.- New manometer & t.law of t.press. of gases betw.1.5 & 0.01 millim.of mercury, 1 p./68, 1901/.- Bakerian-lecture: Law of the press.of gases betw. 75 & 150 millim.of mercury, 1 p./69, 1902/.

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of t. complete radiat. at a given temper., 9 p. Visibility of faint interferencebands, 3 p./27, 1889/.- Achromatic interfer.-bands, 13 p. & 18 p./28, id./.- On bells 17 p.- Vibrat. of an atmosph., 7 p./29, 1890/.- Huygen's gearing in illustrat. of t. induct. of electric currents, 3 p.- Theory of surf. forces, 13 & 20 p.- Tension of water surf., clean & contaminated method of Ripples, 14 p. /30, id./.- Pin-hole photography 13 p./31, 1891/.- Dynam. problems in illustrat. of t. theory of gases, 21 p./32, id./.- Reflexion from liquid surf. in t. neighbourhood of t. polarizing angle, 18 p.- Theory of surf.-forces.- Compress. fluids, 11 p.- Maxwell's investigat. respecting Boltzmann's theorem, 3 p.- Experim. upon surf.-films, 11 p.- Theory of surf.-forces.- Effect of slight contaminations, 3 p./33, 1892/.- Quest. of t. stabil. of t. flow of fluids, 11 p.- Instability of a cylinder of viscous liqu. under capillary force, 9 p.- Instability of cylindr. fluid surf., 3 p.- Intensity of light

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reflected from water & mercury at nearly perpendic. incidence, 11 p.- Interfer. bands of approximately homogen. light /letter of A. Michelson/, 4 p.- Influence of obstacles arranged in rectangular order upon t. properties of a medium, 22 p./34, id./.- Theory of optical images, reference to t. microscope, 28 p.- Theoret. considerat. respect. t. separat. of gases by diffusion & similar processes, 6 p./42, 1896/.- Passage of electric waves through tubes, or t. vibrations of dielectric cylinders, 8 p.- Passage of waves trough apertures in plane screens, & allied problems, 14 p.- Measurem. of alternate currents by means of an obliquely situated galvanometer needle, 6 p./43, 1897/.- Incidence of aerial & electric waves upon small obstacles in t. form of ellipsoids or elliptic cylinders, passage of electric waves through a circular aperture in a conduct. screen, 24 p.- Propagat. of electric waves along cylindrical conductors of any section, 6 p.-

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reciprec.in diffuse reflexion, 1 p.- Law of complete radiation, 2p./49, 1900/.- Approximately simple waves, 4 p.- Theorem analog. to t.virial theorem, 3 p./50, id./ Balfour-Stewart's theory of t. connect.betw.radiat.& absorpt., 2 p.- Spectrosc.notes concern. t.gases of t.atmosph., 6 p.- The stresses in solid bodies due t.unequal heating, & on t.double refract.resulting therefrom, 10 p.- Problem relat.to t.propagation of sound betw.parallel walls, 10 p./1, 1901/.

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